

# IDAHO DEPARTMENT OF FISH & GAME

Jerry M. Conley, Director

Grace Hatchery

Annual Report



October 1, 1980 - September 30, 1981

by

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Fish Hatchery Superintendent II



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## ABSTRACT

During the 1981 fish year, Grace Hatchery received 2,193,036 eggs from five different hatcheries. Rainbow, cutthroat, mackinaw and Henrys Lake hybrids were the four species hatched.

116,544 pounds of fish were produced for area waters, this amounted to 1,508,218 fish. Some 600 pounds, numbering 138,000 Henrys Lake hybrids were reared and transported back to Henrys Lake. We transferred 122,400 fine-spotted cutthroat to Hagerman State Hatchery and 50,400 rainbow to American Falls Hatchery.

The St. Charles Creek trapping operation was continued this year and was successful. This is a cooperative effort with Utah to enhance the Bear Lake cutthroat fisheries in Utah and Idaho.

Fish feed cost for Grace Hatchery was \$51,026.99 and the hatchery fed 248,020 pounds of feed, a conversion rate of 2.13 lbs. of feed for each lb. of fish reared. Cost of feed per pound of fish was \$.438.

Four new raceways were completed and are now in use. A new spring box was installed for the domestic water system. Several more jobs that were necessary for hatchery operation were completed by the Engineering Bureau construction crew.

Author:

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Fish Hatchery Superintendent II



## OBJECTIVES

1. To rear 100,000 pounds of trout, mainly rainbow, cutthroat and mackinaw, for the streams, rivers, lakes and reservoirs of a five county area in southeastern Idaho.
2. To operate a fish trap on St. Charles Creek, each spring, to take the eggs from Bear Lake cutthroat adults. This is a cooperative effort with Utah to improve the future of this fish in Bear Lake.
3. To receive and rear rainbow trout from commercial sources, Hayspur and American Falls Hatcheries; cutthroat eggs from Henrys Lake and Auburn, Wyoming Hatcheries; mackinaw eggs from Jackson National Hatchery at Jackson, Wyoming.

## INTRODUCTION

Grace Hatchery is located in the southeastern section of Idaho in Caribou County, about eight miles south of the town of Grace. The hatchery is fed by springs which make up a small stream known as Whiskey Creek. It eventually flows into the Bear River. We have a maximum flow of just over 16 cfs during fall and winter seasons and a minimum of 9 cfs during the summer irrigation season. Our water temperature is a constant 52° F.

Our hatching and nursery areas are located inside a building with water piped from a spring. This building contains the following:

- 16 tray Heath incubators, 10 stacks.
- 16 nursery vats, 15 feet long by 3 feet wide.
- 1 storage room for feed.
- 1 walk-in freezer.
- 1 small shop area.

Outside rearing areas are as follows:

- 4 raceways--60 feet long by 7 feet wide.
- 4 raceways--60 feet long by 3 feet wide.
- 4 raceways--100 feet long by 4 feet wide. (New addition this year)
- 6 raceways--300 feet long by 14 feet wide.

Other physical features at Grace Hatchery are:

- 3 permanent employees' residences.
- 1 office, shop, public restrooms and summer quarters building.
- 1 four car garage.
- 1 two car garage.
- 1 small storage building.

## FISH PRODUCTION

Eggs received during the fall and winter of 1980-81 were as follows:

|                           |                        |         |
|---------------------------|------------------------|---------|
| Auburn Hatchery           | Fine-Spotted Cutthroat | 631,334 |
| Jackson National Hatchery | Mackinaw               | 443,870 |
| Hayspur State Hatchery    | Rainbow                | 743,512 |

|                                   |                    |           |
|-----------------------------------|--------------------|-----------|
| Trout Lodge (Commercial Hatchery) | Rainbow            | 201,600   |
| Henrys Lake Hatchery              | Henrys Lake Hybrid | 172,722   |
|                                   | Total              | 2,193,036 |

The following waters, by county, were stocked from Grace Hatchery during the 1980-81 fisheries year:

#### BEAR LAKE COUNTY

|                         |           |            |          |              |
|-------------------------|-----------|------------|----------|--------------|
| Bear Lake               | Mackinaw  | 0-3 inches | 550 lbs. | 129,800 fish |
|                         | Rainbow   | 6 +        | 1,400 "  | 4.060 "      |
| Bloomington Creek       | Rainbow   | 6 +        | 800 "    | 2.720 "      |
| Bloomington Lake        | Cutthroat | 3-6        | 300 "    | 16,500 "     |
| Georgetown Creek        | Rainbow   | 6 +        | 800 "    | 2,400 "      |
| Montpelier Creek        | Rainbow   | 6 + "      | 1,700 "  | 5.170 "      |
| Montpelier Rearing Pond | Rainbow   | 3-6        | 200 "    | 6.080 "      |
| Montpelier Reservoir    | Rainbow   | 6 + "      | 2,000 "  | 6,700 "      |
| Pearl Creek             | Cutthroat | 0-3        | 34 "     | 3,128 "      |
| St. Charles Creek       | Rainbow   | 6 + "      | 1,850 "  | 5.350 "      |
| Thomas Fork Creek       | Rainbow   | 6 +        |          |              |
|                         | Totals    | "          | 10,034 " | 183.428 "    |

#### BINGHAM COUNTY

|               |         |            |            |            |
|---------------|---------|------------|------------|------------|
| Rawlins Creek | Rainbow | 6 + inches | 1,050 lbs. | 3,315 fish |
|---------------|---------|------------|------------|------------|

#### BONNEVILLE COUNTY

|                        |            |            |          |             |
|------------------------|------------|------------|----------|-------------|
| Burns Creek            | Cutthroat  | 0-3 inches | 225 lbs. | 51,300 fish |
| Ririe Reservoir        | Rainbow    | 6 + "      | 7,000 "  | 20,300 "    |
| S. F. Snake River      | *Cutthroat | 6 + "      | 465 "    | 5,487 "     |
| Warm Springs Pond      | Cutthroat  | 0-3        | 225 "    | 51,300 "    |
| *Tagged & clipped fish | Totals     |            | 7,915 "  | 128,387 "   |

#### CARIBOU COUNTY

|                       |           |            |            |             |
|-----------------------|-----------|------------|------------|-------------|
| Bear River            | Rainbow   | 6 + inches | 7,100 lbs. | 19,790 fish |
| Dike Lake             | Rainbow   | 6 + "      | 3,000 "    | 8,400 "     |
| Blackfoot Reservoir   | Cutthroat | 0-3        | 800 "      | 89,600 "    |
|                       | "         | 3-6        | 3,100 "    | 143,100 "   |
|                       |           | 6 +        | 13,100 "   | 70,740 "    |
|                       | Rainbow   | 3-6        | 8,620 "    | 237,463 "   |
|                       | Rainbow   | 6 +        | 22,620 "   | 76,510 "    |
| Blackfoot River       |           | 6 +        | 1,600      | 4,000 "     |
| Corral Creek          |           | 6 +        | 1,000      | 2,500 "     |
| Deer Creek            | Cutthroat | 3-6 "      | 40 "       | 2,020       |
| Eagle Creek           |           | 3-6        | 40         | 2,020 "     |
| Eight Mile Creek      | Rainbow   | 6 +        | 1,000      | 3,000 "     |
| Swan Lake #3          |           | 6 +        | 500        | 1,350 "     |
| Tincup Creek          | Cutthroat | 3-6        | 300        | 12,000      |
| Trout Creek           | Rainbow   | 6 +        | 1,200      | 3,080       |
| Twenty-four Mile Res. |           | 6 +        | 1,700      | 5,100       |
| Whiskey Creek         |           | 6 +        | 700        | 1,060       |
|                       | Totals    |            | 66,420 "   | 681,733     |

#### FRANKLIN COUNTY

|            |         |            |            |            |
|------------|---------|------------|------------|------------|
| Rear River | Rainbow | 6 + inches | 1,450 lbs. | 4,055 fish |
|------------|---------|------------|------------|------------|



## FRANKLIN COUNTY (continued)

|                       |         |            |            |             |
|-----------------------|---------|------------|------------|-------------|
| Condie Reservoir      | Rainbow | 6 + inches | 4,550 lbs. | 12,515 fish |
| Cub River             |         | 6 + "      | 1,050 "    | 3,300 "     |
| Foster Reservoir      |         | 6 + "      | 3,000 "    | 7,500 "     |
| Glendale Reservoir    | "       | 6 + "      | 3,050 "    | 8,025 "     |
| Johnson Reservoir     |         | 6 + "      | 1,000 "    | 2,900 "     |
| Lamont Reservoir      |         | 6 + "      | 1,200 "    | 3,000 "     |
| Treasureton Reservoir |         | 6 + "      | 4,600 "    | 11,900 "    |
| Twin Lakes Reservoir  |         | 6 + "      | 5,850 "    | 15,695 "    |
| Winder Reservoir      | "       | 6 + "      | 1,200 "    | 4,080 "     |
|                       |         | Totals     | 26,950 "   | 72,970 "    |

## FREMONT COUNTY

|                       |         |            |            |              |
|-----------------------|---------|------------|------------|--------------|
| Island Park Reservoir | Rainbow | 3-6 inches | 1,600 lbs. | 100,800 fish |
| Henrys Lake           | Hybrids | 0-3        | 600 "      | 138,000 "    |
|                       |         | Totals     | 2,200 "    | 238,800 "    |

## ONEIDA COUNTY

|                  |         |            |          |            |
|------------------|---------|------------|----------|------------|
| Weston Reservoir | Rainbow | 6 + inches | 550 lbs. | 2,035 fish |
|------------------|---------|------------|----------|------------|

## VALLEY COUNTY

|           |          |            |          |             |
|-----------|----------|------------|----------|-------------|
| Warm Lake | Mackinaw | 0-3 inches | 275 lbs. | 24,750 fish |
|-----------|----------|------------|----------|-------------|

Fish transferred from this station during 1980-81:

|                         |           |            |          |              |
|-------------------------|-----------|------------|----------|--------------|
| Hagerman Hatchery       | Cutthroat | 0-3 inches | 450 lbs. | 122,400 fish |
| American Falls Hatchery | Rainbow   | 0-3 "      | 700 "    | 50,400 "     |
|                         |           | Totals     | 1,150 "  | 172,800 "    |

|                        |              |            |              |                |
|------------------------|--------------|------------|--------------|----------------|
| Grace Hatchery reared: | Cutthroat    | 0-3 inches | 1,734        | 317,728 fish   |
|                        |              | 3-6        | 3,780 "      | 175,640 "      |
|                        |              | 6 +        | 13,565 "     | 76,227 "       |
|                        | Rainbow      | 0-3 "      | 700 "        | 50,400 "       |
|                        |              | 3-6 "      | 10,420 "     | 344,343 "      |
|                        |              | 6 + "      | 84,920 "     | 251,330 "      |
|                        | Mackinaw     | 0-3        | 825 "        | 154,550 "      |
|                        |              |            |              |                |
|                        | Hybrids      | 0-3 "      | 600 "        | 138,000 "      |
|                        |              |            |              |                |
|                        | Grand Totals |            | 116,544 lbs. | 1,508,218 fish |

## SPAWNTAKING OPERATION

Each spring, Grace Hatchery personnel installs and operates a trap on St. Charles Creek, a tributary to Bear Lake. The purpose of the trapping is to enhance the native Bear Lake cutthroat fisheries on this large lake in cooperation with Utah. This year 215 adult cutthroat were trapped. Some 68 males and 115 females were hauled to Utah's Swan Creek trap for spawning. These fish were all spawned, tagged

and released back into the lake. We released 16 males and 16 females above the trap to spawn naturally, to maintain a natural run in St. Charles Creek. This amounts to a 20% release, and was agreed upon by both states. The trap was in operation for 38 days from April 30, 1981 to June 6, 1981. Water conditions in St. Charles Creek were very low during the trapping operation.

#### FISH FEED SUMMARY

Grace Hatchery fish consumed the following feed from October 1, 1980 to September 30, 1981:

|                      |              |               |
|----------------------|--------------|---------------|
| Starter, dry         | 500 lbs.     | \$ 132.76     |
| No. 1 Fry            | 1,200 "      | 309.51        |
| No. 2 Fry            | 2,200 "      | 569.01        |
| No. 3                | 4,300 "      | 1,126.51      |
| No. 4                | 10,000 "     | 2,403.75      |
| No. 5                | 24,200 "     | 5,415.03      |
| 5/32 Coarse Crumble  | 7,950 "      | 1,840.43      |
| 3/32 Pellets         | 80,460 "     | 16,051.75     |
| 1/8 Pellets          | 72,060 "     | 14,481.19     |
| 5/32 Pellets         | 44,000 "     | 8,319.55      |
| Medicated            |              |               |
| 5/32 Coarse Crumble  | 600 "        | 190.50        |
| Oregon Moist Pellets | 550 "        | <u>187.00</u> |
| Totals               | 248,020 lbs. | \$51,026.99   |

This calculates out to 2.13 pounds of feed to produce each pound of fish flesh. Cost of feed per pound of fish would be \$.438.

Feed was purchased from Rangen Inc., Murray Elevators and Moore-Clark. We had very efficient service from these companies and no problems with any of their products.

#### FISH HEALTH

We had one minor outbreak of bacterial gill disease at this station during the fisheries year. This was caused by an overcrowded condition. The seagulls have taken a fair number of our smaller fish. The troubled raceways were thinned and cracker shells and PCB's were used to scare the gulls away.

#### HATCHERY IMPROVEMENTS

Following is a list of improvements completed by the Engineering Bureau's construction crew during the year:

1. Four new raceways completed, 100 ft long by 4 ft wide.
2. New hoist and floor completed at lower end of property. Used to load and unload fish tanks and other heavy objects at station.
3. Rebuilt bank on east spring that was leaking from rodent erosion.
4. New two inch water line was installed to residence #2, metal line eroded beyond repair.
5. Electrical outlets were installed above nursery vats to make use of pan feeders.
6. A new cement structure was placed into spring for our domestic water

system. This was intended to be cattle proof and clean up our bad domestic water supply problems.

7. A cement pad was poured under the fish tank filler hose.

The hatchery crew had a very busy year and we completed a very large amount of work:

1. New fence was built and old fence repaired.
2. We spent days cleaning up junk from inside buildings and other areas around property.
3. New screens were built for all our raceways and vats.
4. New storm windows, screen door and front door was put on front porch of residence #3.
5. Flues for wood burning stoves were installed in residences #1 and #3.
6. Much maintenance had to be accomplished on fish transports, new tires, transmission work, etc.

Many more chores and repairs were made that are too numerous to mention.

#### PUBLIC RELATIONS

We had approximately 4,500 visitors come through the facility during the year. Several groups of scouts and the entire grade school, 90 students and 4 teachers, from Lava Hot Springs toured the hatchery during the spring.

The settling pond remained open to fishing and trout up to 6 pounds were taken. This has become a very popular fishing hole for older people and younger children because of very easy access.

#### RECOMMENDATIONS

The metal pipe which feeds our hatchery vats should be replaced, it has deteriorated very badly.

Install a weir for the watermaster, we have bypassed the original weir with the operation of our four new raceways.

A small storage shed is needed to store fish feed and other items essential for operating the four new raceways.

Take out some of the fill around our six large raceways and replace it with some red cinders from area. The mud gets so deep we have to feed in four wheel drive.

#### ACKNOWLEDGEMENTS

The hatchery was staffed during the year by the following people: Jerry Mowery, Fish Hatchery Superintendent II, Paul Smith, Fish Hatchery Superintendent I; John Thorpe, Fish Culturist; Richard Holman, Fish Culturist; Kenneth Taylor, Summer-Aide; and one CETA employee, Sherry McCurdy.